UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,778	10/12/2005	Ziya Ramizovich Karichev	U 015717-4	4420

140 7590 02/25/2009

LADAS & PARRY LLP
26 WEST 61ST STREET
NEW YORK, NY 10023

EXAMINER	
LAIOS, MARIA J	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
02/25/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,778	KARICHEV ET AL.	
	Examiner	Art Unit	
	MARIA J. LAIOS	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 13-26* is/are rejected.

7)☒ Claim(s) *10-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed 27 October 2008. In which claims 1 and 16 have been amended. This office action is also in response to the supplemental amendment filed 9 February 2009, in which claim 7 has been amended to correct a translational error of hydrophilic to hydrophobic.

Claim Rejections - 35 USC § 112

2. The claim rejection under 35 U.S.C. 112, second paragraph, on claim 1 is withdrawn, because the claim has been amended.

Claim Rejections - 35 USC § 103

The claim rejection under 35 U.S.C. 103(a) as unpatentable over Tetzlaff et al. and Divisek are withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13 and 17are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 13, it is unclear to the examiner if nickel-ruthenium alloy is a single alloy comprising nickel and ruthenium or a mixture of nickel and ruthenium alloy. The

examiner will interpret this to mean a nickel system mixed with a ruthenium alloy system. This interpretation appears to be supported by the examples which indicate "Ni:Mo + Ru/Pt" and page 4 of the specification which states that raney nickel (which is in a ratio of 50:50 of Ni:Al). This separates the nickel from the ruthenium and does not have an alloy consisting of ruthenium, nickel, aluminum, molybdenum, and platinum.

As to claim 17, it is unclear to the examiner what is meant by "pyropolymers of N4-complexes on carbon" this will be interpreted as cobalt tetramethoxyphenyl porphyrin is carried on carbon. This interpretation is from example 1 page 5 of the specification which states "promoted by a pyropolymer of cobalt tetramethoxyphenyl porphyrin".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 6 rejected under 35 U.S.C. 102(b) as being anticipated by Gregory (US 3,553,022).

As to claims 1-3, Gregory discloses an alcohol air fuel cell comprising an anode (1), a cathode (5) and an electrolytic chamber (9). Fuel (in liquid form - col. 2 line 44-47) enters compartment (2) and comes in contact with the anode (1). Gregory discloses the fuel as methanol (an alcohol - col. 5 lines 3-7). The air chamber comprises a gas

diffusion cathode (porous electrode) and catalyst layer (see figures 1, 2 and 5). In between the anode and the cathode, is an electrolytic chamber comprising an aqueous potassium hydroxide trapped in an asbestos matrix (col. 5 line 50--52). The membrane electrolyte is therefore an asbestos matrix which is a porous matrix impregnated with the alkaline electrolyte (applies to claims 2 and 3). Gregory further discloses the catalyst can be nickel, copper, zinc, gold, silver, palladium, etc (col. 4 lines 39-50), therefore Gregory teaches non platinum catalysts for the cathode.

As to claim 6, Gregory discloses the oxidizing electrode (the cathode) as a two layer porous electrode with a hydrophilic plastic matrix in contact with the electrolyte and a catalytic material (active layer) in contact with the reactant feed (air chamber- col. lines 38-43).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Iyer (US 2003/0059655 A1).

As to claim 4, Gregory discloses the membrane electrolyte as an asbestos material as is described above but fails to disclose the membrane electrolyte as an anion-exchange membrane.

Iyer discloses a direct oxidation fuel (methanol) in an alkaline fuel cell (Paragraph 22). Iyer teaches that an anionic solid polymer electrolyte would contribute significant weight savings for the total system as compared to a concentrated potassium hydroxide immobilized in an asbestos matrix (Paragraph 110). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the potassium hydroxide immobilized in an asbestos matrix of Gregory with anionic solid polymer membrane of Iyer because it would be a lighter material in the system.

Furthermore it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the potassium hydroxide immobilized in an asbestos matrix of Gregory with the anionic solid polymer membrane of Iyer because anionic solid polymer membrane and potassium hydroxide immobilized in an asbestos matrix are known to be an effective electrolytes in alkaline fuel cells and one would have a reasonable expectation of success in doing so.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Iyer (US 2003/0059655 A1) as applied to claim 4 above, and further in view of Xing et al. (Hydrogen/Oxygen polymer electrolyte membrane fuel cells (PEMFCs) based on alkaline doped polybenzimidazole (PBI).

As to claim 5, Gregory modified by Iyer disclose a fuel cell with an anionic membrane but fails to disclose the membrane as a polybenzimidazole doped with OH ions.

Xing et al. discloses a polymer electrolyte membrane fuel cell and teaches the use of PBI doped with an alkaline solution and teaches it exhibits a high ionic conductivity (lines 1-6 of Conclusion section) and that it is cheaper (line 1-4 of Introduction section). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the membrane of Gregory modified by Iyer with the PBI doped with alkaline solution of Xing et al. because it is cheaper and has a high ionic conductivity.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Yeager et al. (US 4,975,172).

As to claim 7, Gregory discloses a fuel cell as is described above but fails to disclose a hydrophobic layer next to the air chamber.

Yeager et al discloses a fuel cell in which the hydrophobic layer (40) is next to the air chamber (15) in order to prevent the liquid electrolyte from entering the gas side of the cell (leakage) (col. 6 lines 29-34). It would have been obvious to one of ordinary skill to place the hydrophobic layer of Yeager next to the air chamber of Gregory in order to prevent the leakage of the electrolyte into the air chamber.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Kordesch et al (WO 2001/39307 A2) and Choi et al. (US 2003/0198853 A1).

As to claim 8, Gregory discloses a fuel cell with an anode comprising a bilayer or trilayer electrode of porous and catalytic layers as seen in figures 1-3 but fails to disclose a bilayer of an active layer comprising 3-7 weight percent of a fluoroplastic and a membrane comprising polybenzimidazole.

Choi. discloses an anode for a direct methanol fuel cell and teaches the anode include PTFE (polytetrafluoroethylene, a fluorolplastic) in the amount of 10 weight percent (Paragraph 67). While Choi et al.fails to teach the specified amounts of PTFE, it has been held that "generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical" (MPEPE 2144.05), that "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (MPEP 2144.05), and that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation" (MPEP 2144.05). Choi teaches the amount of PTFE is adjusted to impart a suitable viscosity for coating the slurry. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the anode of Gregory with the anode of Choi because Choi teaches the amount of PTFE can be adjusted to bring about a suitable viscosity for the coating of the slurry.

Kordesch et al. discloses a direct methanol fuel cell with a porous anode (26) having a membrane (40) coated on the anode as seen in figure 1. By placing the

membrane on the porous anode it will act as a fuel separator between the anode and the cathode. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a layer of membrane of Kordesh onto the catalyst layer of Gregory in order to further separate the anode and the cathode

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Kordesch et al(WO 2001/39307 A2) and Narayanan et al (US 6,485,851 B1).

As to claim 9, Gregory discloses a fuel cell with an anode comprising a bilayer or trilayer electrode of porous and catalytic layers as seen in figures 1-3 but fails to disclose a bilayer of an active layer comprising 2-7 weight percent of a polybenzimidazole and a membrane comprising polybenzimidazole.

Kordesch et al. discloses a direct methanol fuel cell with a porous anode (26) having a membrane (40) coated on the anode as seen in figure 1. By placing the membrane on the porous anode it will act as a fuel separator between the anode and the cathode. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a layer of membrane of Kordesh onto the catalyst layer of Gregory in order to further separate the anode and the cathode

Modified Gregory discloses an anode and a membrane but fails to disclose the addition of polybenzimidazole to the anode.

Narayanan et al. discloses a liquid methanol fuel cell which includes polybenzimidazole (PBI, col. 4 lines 25-26) in a catalyst layer. Because this polymer

would improve the wetting of the electrode (col. 4 lines 18-20) it would be obvious to include the PBI in the catalyst layer of Gregory because this would improve the wetting of the electrode.

While Narayanan et al.fails to teach the specified amounts of PBI, it has been held that "generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical" (MPEPE 2144.05), that "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (MPEP 2144.05), and that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation" (MPEP 2144.05).

10. Claims 13 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Biberbach (6,814,777) and Richter (US 3,673,116)

As to claims 13, and 20-25, Gregory teaches the fuel cell with various catalysts (col. 4 lines 36-50) as discussed above and incorporated. However, Gregory fails to disclose a catalyst for the anode as a system of nickel and ruthenium. Biberbach discloses the a Pt-Ru alloy that is an effective catalyst in a fuel cell system with the size of a Pt:Ru as 5.2 nm and a BET surface area of greater than 40 m^2/g (col.2 line 43, col. 7 line 8, in the table) and exhibits long term stability in DMFC (col. 7 line 3).

Richter discloses an effective catalyst for a fuel cell as Raney nickel aluminum molybdenum (col. 1 lines 42), which is more effective than Raney nickel alone (col. 1 line 45). It would have been obvious to one of ordinary skill in the art to combine the Pt:Ru and the Raney Ni-Al-Mo with the appropriate compositions in order to make an effective and optimal catalyst for a fuel cell.

It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose *In re Kerkhoven 205 USPQ 1069, 1072.* It has been held in the courts that when the general conditions of a claim are similarly disclosed in the prior art, it is not inventive to optimize general conditions as concentration. *In re Aller, Lacey and Hall, 105 USPQ 233,235.*

13. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Ozin et al (4,569,924).

Gregory discloses a catalyst for the electrodes as silver but fails to disclose the silver is 7-18 weight percent on the carbon carrier and the surface area is 60-80 m^2/g. Ozin et al. discloses a silver-carbon catalyst with a 0.1-15 weight percent (col. 6 lines 26-30) for use in a fuel cell as teaches that the size will determine the efficiency of the fuel cell (col. 7, lines 18-29) that shows by making the size/surface a result effect variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the silver –carbon catalyst of Ozin in the fuel cell of in place of silver in Gregory in order to increase the overall surface area of the silver in the electrode.

14. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) in view of Solomon et al. (US 4,615,954).

As to claims 17 -19, Gregory teaches the fuel cell with a silver cathode catalyst as discussed above and incorporated herein but fails to disclose a pyropolymer on a carbon carrier with a 10-20 weight percent and a surface area of at least 60-80 m^2/g.

Solomon et al. discloses catalyst used for a gas diffusion electrode in which the catalyst is cobalt tetramethoxyphenyl porphyrin on carbon with a 5-25 percent of the catalyst and is an art equivalent catalyst of silver (col. 3 lines 30-40). Solomon et al. further discloses carbon having a BET surface area of 1000 m^2/g (col. 3 lines 15-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the silver catalyst of Gregory with a cobalt tetramethoxyphenyl porphyrin – carbon catalyst because cobalt tetramethoxyphenyl porphyrin – carbon catalyst is an art recognized equivalent of silver as a fuel cell catalyst. See MPEP 2144.06.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 3,553,022) and Biberbach (6,814,777) and Richter (US 3,673,116) as applied to claim 13 above and in view of Kordesch et al (WO 2001/39307 A2) and Xing et al.

(Hydrogen/Oxygen polymer electrolyte membrane fuel cells (PEMFCs) based on alkaline doped polybenzimidazole (PBI) and Narayanan et al (US 6,485,851 B1).

As to claim 26, modified Gregory discloses a porous anode with a catalyst coating as is shown in figure 1, with the following order:

(methanol mixture)- Porous structure - catalyst - (electrolyte)

Gregory fails to disclose an additional layer of membrane to the anode to form a three layer system in the order of:

(methanol mixture)- Porous structure - catalyst+PBI - layer filled with PBI- (electrolyte)

Kordesch et al. discloses a direct methanol fuel cell with a porous anode (26) having a membrane (40) coated on the anode as seen in figure 1. By placing the membrane on the porous anode it will act as a fuel separator between the anode and the cathode. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a layer of membrane of Kordesh onto the catalyst layer of Gregory in order to further separate the anode and the cathode.

Modified Gregory further modified by Kordesch fail to disclose the membrane as PBI (polybenziadazole) or the catalyst as a mixture of PBI and catalyst.

Xing discloses a fuel cell and teaches PBI as a membrane doped in an alkaline solution (section 2.1). It would have been obvious to one of ordinary skill in the art to have the membrane of Xing in the system of modified Gregory because the membrane is compatible with the system and further demonstrate a high ionic conductivity (section 4).

Narayanan et al. discloses a liquid methanol fuel cell which includes polybenzimidazole (PBI, col. 4 lines 25-26) in a catalyst layer. Because this polymer would improve the wetting of the electrode (col. 4 lines 18-20) it would be obvious to include the PBI in the catalyst layer of Gregory because this would improve the wetting of the electrode.

While Narayanan et al. fails to teach the specified amounts of PBI, it has been held that "generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical" (MPEPE 2144.05), that "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (MPEP 2144.05), and that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation" (MPEP 2144.05).

Allowable Subject Matter

16. Claims 10 -12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: As to claims 10 and 11, the closest prior art of record is Gregory which discloses a fuel cell for a direct alcohol air fuel cell but fails to disclose an anode which comprises a porous nickel band filled with polybenzimidazole

and an active layer comprising 3-7 weight percent fluoroplastic or 2-7 weight percent polybenzimidazol. As for claim 12, the closest prior art of record is Kordesh which discloses a direct methanol fuel cell with an acid based electrolyte. The anode of Kordesh is described as an anode with an asbestos membrane but fails to disclose the asbestos impregnated with PBI or the active later comprising the require amounts of fluoroplastic or PBI.

Response to Arguments

17. Applicant's arguments, see pages 6-9, filed 10/27/2008, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art.

18. Applicant argues:

a. The combination of Tetzlaff and Divisek for claim 1-3.

b. Xing article is focused on a PEM and not a direct methanol fuel cell

c. '578 patent discloses a hydrogen-air fuel cell (claim 6)

d. The rejections of claims 8 and 10, 11,12

e. The catalysts are not for a direct methanol fuel cell (claims 14-16)

f. The catalyst requires a non platinum catalyst of pyropolymer of N4 complexes on carbon carrier (claims 17-19)

g. The anode catalyst is a nickel ruthenium catalyst (claims 13, 20-25)

h. The references do not disclose a trilayer electrode (claim 26)

19. In response to the arguments

a. The combination of Tetzlaff and Divisek has been withdrawn and these claims have been rejected in view of newly found art.

b. The Xing article compares the membrane of a PBI membrane doped with OH- and those based on Nafion system in a PEM fuel cell. Although the system in which the fuel cell were examined is not a direct methanol fuel cell one of ordinary skill would understand that the membrane can be used in a DMFC because DMFC is a type of PEM fuel cell.

c. The rejection of claim 6 has been withdrawn in light of newly found art.

d. The rejections of claims 10-12 have been withdrawn in light of allowable subject matter stated above. The rejection of claim 8 has been withdrawn in light of newly found art.

e. Although the catalysts are not directed for a DMFC, Gregory discloses that silver is a catalyst for a direct methanol fuel cell and the applicant has not provided evidence that the catalyst provided will not work.

f. It is unclear to the Examiner what the applicant is arguing because the catalyst is a pyropolymer of cobalt tetramethoxyphenyl porphyrin. Applicant states that CTP is a particular case of pyropolymer of N4 complexes (page 15 of arguments).

g. See rejection of claims 13 under 35 U.S.C. 112, second paragraph above.

h. The rejection of claim 8 has been withdrawn in light of newly found art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on Monday - Thursday 10 am -7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795